

**AMENDMENTS TO THE CLAIMS**

The following listing of claims replaces all prior versions of claims in the application.

1. (Original): A plate making apparatus, comprising:  
  
a plurality of stations (S0 to S5) arranged in order, the number of said stations being at least equal to the number of steps of a plate making procedure;  
  
a plurality of processing apparatus corresponding one by one to the steps of the plate making procedure and disposed in order of the plate making procedure at said stations (S0 to S5); and  
  
a transport apparatus (11, 51, 61) for successively transporting a plurality of printing plates (1) from one to another one of said stations in order of the plate making procedure.
2. (Original): The plate making apparatus as set forth in claim 1, wherein  
  
the printing plates (1) are regenerative printing plates, and the plate making procedure includes a step of regenerating a plate face of each printing plate (1).
3. (Original): The plate making apparatus as set forth in claim 2, wherein,  
  
as said processing apparatus, at least a pattern erasing apparatus (30), a picture material applying apparatus (31), a drying apparatus (32) and a pattern writing apparatus (33) are provided.

4. (Currently amended): The plate making apparatus as set forth in ~~any one of claims 1 to 3~~ claim 1, wherein

each of the printing plates (1) is provided on an outer periphery of a cylindrical carrier (2) and is transported integrally with said carrier (2) by said transport apparatus (11, 51, 61).

5. (Original): The plate making apparatus as set forth in claim 4, further comprising a carry-in apparatus (15) including a before-processing stock section in which one or more such carriers (2) before the plate making process are stocked, said carry-in section (15) carrying in one of the carriers from said before-processing stock section to said transport apparatus.

6. (Original): The plate making apparatus as set forth in claim 5, wherein said carry-in apparatus (15) includes, as said before-processing stock section, a pair of inclined rails (13, 16) for supporting the opposite ends of the carrier and further includes one or more stoppers (14, 17) provided on said inclined rails (13, 16) and capable of selecting either one of an on state in which rolling of the carrier (2) is controlled and an off state in which rolling of said carrier (2) is permitted, and carries in the carriers (2) one by one by on/off changeover of said stoppers (14, 17).

7. (Currently amended): The plate making apparatus as set forth in claim 5 ~~[[or 6]]~~, wherein

said carry-in apparatus (15) includes a decision apparatus for deciding a use situation of each printing plate (1) before the printing plate (1) is carried into said transport apparatus (11, 51, 61) and a selection apparatus for taking out, where it is decided by said decision apparatus that the printing plate is not suitable for regeneration, the carrier (2) which has the rejected printing plate thereon from the carry-in line.

8. (Currently amended): The plate making apparatus as set forth in ~~any one of claims 4 to 7~~ claim 4, further comprising

a carry-out apparatus (15) for carrying out the carriers (2) after the plate making process from said transport apparatus (11, 51, 61), said carry-out apparatus (15) including an after-processing stock section in which one or more such carried out carriers (2) are stocked.

9. (Currently amended): The plate making apparatus as set forth in ~~any one of claims 4 to 8~~ claim 4, wherein

said transport apparatus (11, 51, 61) includes a number of pairs of chuck apparatus (20) for fitting into openings (2a) at the opposite ends of each carrier (2) to grasp the carrier (2) from the opposite sides and centering the carrier (2) with a predetermined reference axis (O2), the number being at least equal to the number of said stations (S0 to S5), each of the carriers (2) being carried while being grasped by said chuck apparatus (20).

10. (Original): The plate making apparatus as set forth in claim 9, wherein

the carrier (2) is carried in to a mounting and dismounting position for the carrier (2) by said chuck apparatus (20) from a perpendicular direction to the reference axis (O2), and is carried out in a perpendicular direction to the reference axis (O2).

11. (Currently amended): The plate making apparatus as set forth in claim 9 [[or 10]], wherein

said stations (S0 to S5) are arranged on a circle centered at a horizontal shaft (O1), and

said transport apparatus (11, 51, 61) revolves said chuck apparatus (20) around the horizontal shaft (O1) to carry the carriers (2) in order from one to another one of said stations.

12. (Original): The plate making apparatus as set forth in claim 11, wherein carry-in and carry-out stations (S0 and S5) for mounting each carrier (2) carried in from the outside on said chuck apparatus (20) and dismounting the carrier (2) after the plate making process therefor from said chuck apparatus (20) to carry out the carrier (2) to the out side are provided at the lowest or highest location of the circle.

13. (Original): The plate making apparatus as set forth in claim 11, wherein a carry-in station (S0) for mounting each carrier (2) carried in from the out side on said chuck apparatus (20) is provided at the lowest or highest location of the circle, and a carry-out station (S5) for dismounting the carrier (2) after the plate making process therefor from said chuck

apparatus (20) to carry out the carrier (2) to the outside is provided at a position opposing to said carry-in station (S0) at the lowest or highest location of the circle.

14. (Currently amended): The plate making apparatus as set forth in claim 9 [[or 10]], wherein

said stations (S0 to S5) are arranged on a line, and

said transport apparatus (11, 51, 61) causes said chuck apparatus (20) to move back and forth along the line to successively carry the carriers (2) from one to another one of said stations.

15. (Original): The plate making apparatus as set forth in claim 14, wherein  
a carry-in station (S0) for mounting each carrier (2) carried in from the outside on said chuck apparatus (20) is provided at one end of the line, and a carry-out station (S5) for dismounting the carrier (2) after the plate making process therefor from said chuck apparatus (20) to carry out the carrier (2) to the outside is provided at the other end of the line.

16. (Original): The plate making apparatus as set forth in claim 14, wherein  
carry-in and carry-out stations (S0 and S5) for mounting each carrier (2) carried in from the outside on said chuck apparatus (20) and dismounting the carrier (2) after the plate making process therefor from said chuck apparatus (20) to carry out the carrier (2) to the outside are provided at one end of the line.

17. (Currently amended): The plate making apparatus as set forth in ~~any one of claims 11 to 13~~ claim 11, wherein

said transport apparatus (11, 51, 61) includes a rotary member (11a) supported on said horizontal shaft (O1) and rotatable around said horizontal shaft (O1), and said chuck apparatus (20) is provided on said rotary member (11a).

18. (Currently amended): The plate making apparatus as set forth in ~~any one of claims 11 to 16~~ claim 11, wherein

said transport apparatus (11, 51, 61) includes a guide (53, 63) provided in an arrangement direction of said stations (S0 to S5) and a caterpillar member (52, 62) provided for circulation along said guide (53, 63), and said chuck apparatus (20) is provided on said caterpillar member (52, 62).

19. (Currently amended): The plate making apparatus as set forth in ~~any one of claims 4 to 8~~ claim 4, wherein

a pair of chuck apparatus (20) for fitting into openings (2a) at the opposite ends of each carrier (2) to grasp the carrier (2) from the opposite sides and centering the carrier (2) with a predetermined reference axis (O2) are provided at each of said stations (S0 to S5), and said chuck apparatus (20) mount and dismount each carrier (2) to transfer the carrier (2) between the station (S0 to S5) and said transport apparatus (11, 51, 61).

20. (Currently amended): The plate making apparatus as set forth in ~~any one of claims 4 to 19~~ claim 4, further comprising

an adjustment apparatus for adjusting the position of each of said processing apparatus at each of said stations (S0 to S5) in response to the diameter of the carrier (2).

21. (Currently amended): The plate making apparatus as set forth in ~~any one of claims 1 to 20~~ claim 1, further comprising

a clean air supplying apparatus (19, 110, 110A and 140) for supplying clean air to a periphery of each printing plate (1) at least within a period of time after picture material is applied to the printing plate (1) until the picture material is dried.

22. (Original): The plate making apparatus as set forth in claim 21, wherein the clean air supplied from said clean air supplying apparatus (19, 110, 110A and 140) has a cleanliness of class 1000 or more according to the FED standard.

23. (Currently amended): The plate making apparatus as set forth in claim ~~[[22]]~~ 21 or ~~[[23]]~~ 22, further comprising

a chamber (107, 134) for isolating, from the outside, a space in which a series of processes in which at least picture material is applied to the surface of each printing plate (1) by

said applying apparatus (31, 131) and then the application film of the applied picture material is dried by said drying apparatus (32, 132) is performed,

said clean air supplying apparatus (110, 140) supplying clean air into the inside of said chamber (107, 134).

24. (Original): The plate making apparatus as set forth in claim 23, wherein the pressure in said chamber (107, 134) is set higher than that outside of said chamber (107, 134).

25. (Currently amended): The plate making apparatus as set forth in claim 23 [[or 24]], further comprising an exhaust apparatus (114) for compulsorily exhausting the air in said chamber (107, 134) to the outside.

26. (Original): The plate making apparatus as set forth in claim 25, further comprising a circulation system for circulating air exhausted by said exhaust apparatus (114) to said clean air supplying apparatus (110) so that the air after purified is used as clean air again.

27. (Currently amended): The plate making apparatus as set forth in ~~any one of claims 23 to 26~~ claim 23, further comprising:



a measuring instrument (121) for measuring the cleanliness in said chamber (107, 134); and

a control apparatus (120) for controlling the air volume of said clean air supplying apparatus (110, 140) so that the measurement value of said measuring instrument (121) may be a predetermined value.

28. (Currently amended): The plate making apparatus as set forth in ~~any one of claims 23 to 26~~ claim 23, further comprising:

a measuring instrument (122) for measuring the difference between the pressure in said chamber (107, 134) and the pressure outside of said chamber (107, 134); and

a control apparatus (120) for controlling the driving force of a blast source of said clean air supplying apparatus (110, 140) so that the measurement value of said measuring instrument (121) may be a predetermined value.

29. (Currently amended): The plate making apparatus as set forth in ~~any one of claims 21 to 26~~ claim 21, further comprising:

a measuring instrument for measuring the wind speed of the clean air supplied from said clean air supplying apparatus (110, 140); and

a control apparatus (120) for controlling the driving force of a blast source of said clean air supplying apparatus (110, 140) so that the measurement value of said measuring instrument may be a predetermined value.

30. (Currently amended): The plate making apparatus as set forth in ~~any one of claims 21 to 29~~ claim 21, further comprising

a removing apparatus for removing foreign substance adhering to the surface of each printing plate before picture material is applied to the printing plate by said picture material applying apparatus (31, 131).

31. (Currently amended): The plate making apparatus as set forth in ~~any one of claims 21 to 30~~ claim 21, further comprising

a heating apparatus for heating the clean air to be supplied from said clean air supplying apparatus (110, 140).

32. (Currently amended): The plate making apparatus as set forth in ~~any one of claims 1 to 31~~ claim 1, further comprising, as the processing apparatus:

a development station (S4) in which a development apparatus (34) for developing a pattern written on the plate face of each printing plate (1);

a supporting member (20) disposed at said development station (S4) for supporting each printing plate (1) in the form of a tube; and

a supplying apparatus (34S, 34A to 34E) disposed at said development station (S4) for supplying processing liquid for development to the plate face of the printing plate (1) supported by said supporting member (20).

33. (Original): The plate making apparatus as set forth in claim 32, wherein  
the tube is positioned on the upper side of said supplying apparatus (34S, 34A to 34E) at said development station (S4), and said supplying apparatus (34S, 34A to 34E) supplies the processing liquid for development from the lower side of the tube to the plate face of the printing plate (1).

34. (Currently amended): The plate making apparatus as set forth in claim 32 [[or 33]], wherein  
said supplying apparatus (34S, 34A to 34E) includes a processing liquid supplying member configured from one or a plurality of rollers, a spray, or a slit formed from one or a plurality of plate materials.

35. (Currently amended): The plate making apparatus as set forth in ~~any one of claims 3 to 34~~ claim 3, wherein

said pattern erasing apparatus (30) is configured by arranging, around an outer periphery of the regenerative printing plate (1) formed from a cylindrical face:

a washing agent nozzle (301) for injecting washing agent toward the plate face;

a plate face rubbing apparatus (302) for rubbing the plate face;

a water nozzle (303) for injecting water toward the plate face; and

a liquid recovery apparatus (304) for recovering the water on the plate face.

36. (Currently amended): The plate making apparatus as set forth in ~~any one of claims 1 to 35~~ claim 1, further comprising:

a detection apparatus (44) for detecting an abnormal state appearing in the plate making apparatus; and

an outputting apparatus (45) for automatically outputting a signal to the outside when an abnormal state is detected by said detection apparatus (44).

37. (Original): The plate making apparatus as set forth in claim 36, wherein  
said outputting apparatus (45) automatically outputs an abnormal state signal to a portable terminal of an operator through a telephone line.

38. (Original): A plate making apparatus, comprising:  
a cylindrical carrier (2) including a printing plate on an outer peripheral face thereof;

a pair of chuck apparatus (20) for fitting in openings at the opposite ends of said carrier (2) to grasp said carrier (2) from the opposite sides and centering said carrier (2) with a predetermined reference axis (O2); and

one or a plurality of processing apparatus disposed in a direction toward said carrier (2) centered by said chuck apparatus (20) for performing a plate making process for the printing plate supported by said carrier (2);

said carrier (2) before processing being carried into a space between the pair of chuck apparatus (20) from a perpendicular direction to said reference axis (O2), said carrier (2) after the plate making process being carried out from the space between the pair of chuck apparatus (20) to a perpendicular direction to said reference axis (O2).

39. (Original): A management method for a regenerative printing plate which is used in a state wherein the regenerative printing plate is mounted on a cylindrical carrier (2), comprising the steps of:

applying a printing plate identification number to each regenerative printing plate (1) while a carrier identification number is applied to each carrier (2) and producing a file (42) for recording a use situation of each regenerative printing plate (1) for each plate identification number;

recording, when each regenerative printing plate (1) is to be used, the printing plate identification number thereof in a corresponding relationship to the carrier identification number of the carrier (2) on which the regenerative printing plate (1) is mounted into a table (43); and

reading, every time each regenerative printing plate (1) is used, the carrier identification number from the carrier (2) to search the printing plate identification number corresponding to the read carrier identification number from the table (43) and recording and updating the use situation of the regenerative printing plate into the file (42) corresponding to the printing plate identification number.

40. (Original): The management method for a regenerative printing plate as set forth in claim 39, wherein

a radio reading type data storage device is attached to each carrier (2) and the carrier identification number is stored in said data storage device.

41. (Original): A management method for a regenerative printing plate, comprising the steps of:

writing use situation data on a plate face of a regenerative printing plate (1) together with a pattern;

reading, when the pattern of the regenerative printing plate (1) is to be rewritten, the use situation data of the plate face and temporarily storing the use situation data into a memory (71) before regeneration; and

updating, after the regeneration, the use situation data temporarily stored in the memory together with the new pattern and writing the use situation data on the plate face of the regenerative printing plate (1).

42. (Original): A management method for a regenerative printing plate, comprising the steps of:

applying a printing plate identification number to each regenerative printing plate (1) and writing the printing plate identification number on a plate face;

producing a file (82) for recording a use situation of each regenerative printing plate (1) for each plate identification number;

reading, when a pattern of each regenerative printing plate (1) is rewritten, the plate identification number of the plate face and temporarily storing the plate identification number into a memory (83) before regeneration and then recording and updating the use situation of the regenerative printing plate into said file (82) corresponding to the read out printing plate identification number; and

writing, after the regeneration, the printing plate identification number temporarily stored in said memory (83) together with the new pattern on the plate face of the regenerative printing plate (1).

43. (Original): An interstage sleeve which is applicable to a cylindrical carrier (2) having a printing plate (1) provided on an outer peripheral face thereof and functions, when mounted on a center shaft provided in a printing machine, as a printing cylinder or a blanket drum of the printing machine, wherein a composite material of a microballoon material and a resin material is used as a configuration material.

44. (Original): The interstage sleeve as set forth in claim 43, wherein said interstage sleeve is integrally formed from the composite material.

45. (Original): The interstage sleeve as set forth in claim 43, wherein said interstage sleeve is formed from a plurality of layers, and at least one of said layers is formed from the composite material.

46. (Original): The interstage sleeve as set forth in claim 45, wherein the layer formed from the composite material forms a surface or a layer in the proximity of the surface.

47. (Currently amended): The interstage sleeve as set forth in ~~any one of claims 43 to 46~~ claim 43, wherein said interstage sleeve has a regenerative printing plate provided on the surface thereof and is mounted on the center shaft such that said interstage sleeve functions as the printing cylinder of the printing machine, and said interstage sleeve functions, when a regeneration process is performed for the printing plate, as means for supporting the printing plate.

48. (Original): The interstage sleeve as set forth in claim 43, wherein said interstage sleeve is formed from an outside sleeve and an inside sleeve removable from each other.

49. (Original): The interstage sleeve as set forth in claim 48, wherein at least one of said outside sleeve and said inside sleeve is integrally formed from the composite material.



50. (Original): The interstage sleeve as set forth in claim 48, wherein at least one of said outside sleeve and said inside sleeve is formed from a plurality of layers, and at least one of the layers is formed from the composite material.

51. (Original): The interstage sleeve as set forth in claim 50, wherein the layer formed from the composite material forms the surface of said outside sleeve or a layer in the proximity of the surface of said outside sleeve.

52. (Currently amended): The interstage sleeve as set forth in ~~any one of claims 48 to 51~~ claim 48, wherein said interstage sleeve has a regenerative printing plate provided on the surface thereof and is mounted on the center shaft such that said interstage sleeve function as a printing cylinder of the printing machine, and said outside sleeve functions, when a regeneration process is performed for the printing plate, as means for supporting the printing plate.